

**MICHIGAN DEPARTMENT OF CIVIL SERVICE  
JOB SPECIFICATION**

**ENGINEER**

**JOB DESCRIPTION**

Employees in this job function as professional engineers, completing or overseeing a variety of assignments involving general, electrical, mechanical or chemical engineering.

There are four classifications in this job.

**Position Code Title – Engineer-E**

**Engineer 9**

This is the entry level. As a trainee, the employee carries out a range of professional engineer assignments while learning the methods of the work.

**Engineer 10**

This is the intermediate level. The employee carries out an expanding range of professional engineer assignments in a developing capacity.

**Engineer P11**

This is the experienced level. The employee performs a full range of professional engineer assignments in a full functioning capacity. Considerable independent judgement is used to make decisions in carrying out assignments that have significant impact on services or programs. Guidelines may be available, but require adaptation or interpretation to determine appropriate courses of action.

**Position Code Title –Engineer-A**

**Engineer 12**

This is the advanced level. The employee may function as a lead worker or senior worker. At this level, employees are responsible for overseeing the work assignments of other professionals or have regular assignments, which have been recognized by Civil Service as having significantly greater complexity than those assigned at the experienced level in the series.

**NOTE:** Employees generally progress through this series to the experienced-level based on satisfactory performance and possession of the required experience.

**JOB DUTIES**

**NOTE:** The job duties listed are typical examples of the work performed by positions in this job classification. Not all duties assigned to every

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position are included, nor is it expected that all positions will be assigned every duty.

Reviews and analyzes plans and specifications of engineering systems and equipment to determine compliance with sound engineering practices and established standards, codes, and regulations.

Prepares plans, specifications, contract documents, and cost estimates for a variety of engineering systems and equipment.

Advises and consults with architects, engineers, and contractors in the layout, design, and code requirements for electrical or mechanical installations.

Makes periodic inspections of equipment and systems to observe and make recommendations on operational procedures.

Conducts chemical and physical studies of a variety of materials and develops laboratory apparatus and procedures to implement results.

Determines the validity and reliability of testing methods and procedures.

Prepares reports and recommendations on all phases of specific engineering problems.

Conducts technical investigations and prepares reports or correspondence based on interpretations of the resulting data.

May conduct training for program staff and others in area of expertise.

Maintains records, prepares reports and correspondence related to the work.

May perform related essential functions appropriate to the class and other non-essential functions as required.

**Additional Job Duties**

**Engineer 12 (Lead Worker)**

Oversees the work of professional staff by making and reviewing work assignments, establishing priorities, coordinating activities, and resolving related work problems.

**Engineer 12 (Senior Worker)**

Performs on a regular basis professional engineer assignments, which are recognized by Civil Service as more complex than those assigned at the experienced level.

**JOB QUALIFICATIONS**

**Knowledge, Skills, and Abilities**

**NOTE:** Some knowledge in the area listed is required at the entry level, developing knowledge is necessary at the intermediate level, considerable knowledge is required at the experienced level, and thorough knowledge is required at the advanced level.

Knowledge of the principles and practices of a specialized field of engineering.

Knowledge of mathematics and mathematical tables used in engineering work.

Knowledge of accepted practices followed in preparing plans, estimates, specifications, and contracts for engineering work.

Knowledge of nomenclature and symbols used in engineering.

Knowledge of equipment and materials used in engineering.

Knowledge of engineering design and related drafting practices.

Skill in the use of engineering instruments and tools.

Ability to perform technical research work and to make comprehensive recommendations on engineering problems.

Ability to make mathematical computations and to design engineering projects.

Ability to collect and analyze engineering data.

Ability to read, interpret and prepare engineering plans and specifications and technical reports.

Ability to organize, evaluate, and present information effectively.

Ability to maintain records and prepare reports and correspondence related to the work.

Ability to communicate effectively with others.

Ability to maintain favorable public relations.

**Additional Knowledge, Skills, and Abilities**

**Engineer-12 (Lead Worker)**

Ability to organize and coordinate the work of others.

Ability to set priorities and assign work to other professionals.

**Working Conditions**

None.

**Physical Requirements**

None.

**Education**

Possession of a bachelor's of science degree in engineering.

**Experience**

Engineer 9

No specific amount or type is required.

Engineer 10

One year of professional experience providing electrical, mechanical or chemical engineering services equivalent to an engineer in state service.

Engineer P11

Two years of professional experience providing electrical, mechanical or chemical engineering services equivalent to an Engineer in state service, including one year equivalent to an intermediate level Engineer.

Engineer 12

Three years of professional experience providing electrical, mechanical or chemical engineering services equivalent to an Engineer in state service, including one year equivalent to an experienced level Engineer.

**Special Requirements, Licenses, and Certifications**

Engineer 12

Some positions may require possession of a registered professional engineering license as required by the State of Michigan.

**NOTE:** Equivalent combinations of education and experience that provide the required knowledge, skills, and abilities will be evaluated on an individual basis.

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**JOB CODE, POSITION TITLES AND CODES, AND COMPENSATION INFORMATION**

<b><u>Job Code</u></b>	<b><u>Job Code Description</u></b>
ENGINEER	Engineer

<b><u>Position Title</u></b>	<b><u>Position Code</u></b>	<b><u>Pay Schedule</u></b>
Engineer-E	ENGINE	H21- 008
Engineer-A	ENGINEA	H21-013

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EAF & GJH/VLWT/JKVH